

Date: Monday, 6/26/2006 1:48:42 PM  
 User: Jean-Luc Menard

## Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: AFT TUBE ASSEMBLY
Job Number	: 27687		
Estimate Number	: 10699		
P.O. Number	: <i>N/A</i>	Part Number	: D3391025
This Issue	: 6/26/2006	Drawing Number	: D3391 REV E
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <i>N/A</i>	Drawing Revision	: E
Previous Run	: 27686	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 7/30/2006
Checked & Approved By	: <i>[Signature]</i>	Qty:	1 Um: Each
Comment	: Est Rev B 06-02-07 ECN773 dwg rev. D EC Est Rev:C 06-03-28 Update Manufacturing Instructions JLM		

## Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	D6014090	ALUMINUM EXTRUSION
-----	----------	--------------------



Comment: Qty.: 1.0000 f(s)/Unit Total : 1.0000 f(s)

ALUMINUM EXTRUSION

Pick:

Qty	Part Number	Description	Batch
1	D6014-090	Extrusion	<i>B26546</i>

Identify as D3391-3

*MS 06/08/15**1*

2.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI CNC LATHE LARGE

Turn as per Folio FA599

Rev: *D* & Dwg D3391 Rev: *E**36/ MS 06/08/16**1*

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

*36/ MS 06/08/16**1*

4.0	HAAS1	HAAS CNC VERTICAL MACHINING #1
-----	-------	--------------------------------



Comment: HAAS

1-Machine as per Folio FA 599 Rev: *AA* & Dwg D3391 Rev: *E*

2-Drill ( PILOT HOLE) aft cap holes per Dwg D3391 using DT8803

3-Deburr

*9M 06/08/24**1*



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Job Number: 27687

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

*ml 06/08/24*

6.0

QC8

SECOND CHECK



Comment: SECOND CHECK

*Er 06/08/29 x1*

7.0

BENDING

BENDING MACHINE



Comment: NC Bender

Form as per Dwg D3391 Using Bend Prog 3391025

*DP 6-8-29*

8.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*BE 6-8-30*

9.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open Aft cap pilot hole to .208" as per Dwg D3391

2-Drill Tube as per D3391 using DT8809 (HOLES MARKED "A" ONLY)

3-Drill and c' sink wearshoe holes as per Dwg D3391 Using DT8878(Mid Tube) & DT8217 Wearplate Jig

4-C'sink holes for float bag (4 holes per side) as per Dwg D3391

5-Deburr

*pm 06-08-31*

Tools: rill

*> DP 6-8-30*

*pm 06-08-31*

*pm 06-08-31*

10.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

*Job 09-05*

11.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Acid etch and Alodine as per QSI 005 4.1

*a.m.s. 06/10/10*

*1*

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Job Number: 27687

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

12.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

FC 06 10 31 ①

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

FC 06/10/31 ①

14.0

NAS1330C3KB166

INSERT



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

INSERT

Pick:

Qty

8

AE5S10KB166

Part Number

Description

Batch

NAS1330C3KB166

Insert

18626

FC

15.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Install Inserts as per dwg

FC 06-10-31 ①

16.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

MM 06 10 31

①

17.0

AE5S10KB366

INSERT



Comment: Qty.: 14.0000 Each(s)/Unit Total : 14.0000 Each(s)

Insert

Pick:

Qty

14

Part Number

Description

Batch

AE5S10KB366 Insert

101248

FC

18.0

AE5S10KB266

INSERT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

Pick:

Qty

2

Part Number

Description

Batch

AE5S10KB266

Insert

17905

FC

or NAS1330C3KB266

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## Process Sheet

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Drawing Name: AFT TUBE ASSEMBLY

Job Number: 27687

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

19.0

AESS10KB316

INSERT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

INSERT

Pick:

Qty	Part Number	Description	Batch
2	AESS10KB316	Insert	17905
	or NAS1330C3KB316		

Batch

17905

FC

20.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Aft Cap

Pick:

Qty	Part Number	Description	Batch
1	D2646	Aft Cap	28041

Batch

28041

21.0

AN3C4A

BOLT



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Bolt

Pick:

Qty	Part Number	Description	Batch
2	AN3C4A	Bolt	101390

Batch

101390

22.0

AN960C10L

washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Inventory

Pick:

Qty	Part Number	Description	Batch
2	AN960C10L	Washer	101340

Batch

101340

23.0

NAS1515H3L

WASHER



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

WASHER

Pick:

Qty	Part Number	Description	Batch
2	NAS1515H3L	Washer	101418

Batch

101418

FC 06 10 3L @

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Job Number: 27687

Part Number: D3391025

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: SMALL & MEDIUM FAB RESOURCE 1

1-Install inserts as per Dwg D3391

FC 06 10 31

2-Install Aft Cap as per Dwg D3391

A/ R Sikaflex-2411-291 102660

Sikaflex expiry date: 02 07

FC 06 10 31

25.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

MA 06 10 31

(1)

26.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

MA

27.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

06/11/29

(1)

Job Completion



4 06/11/29

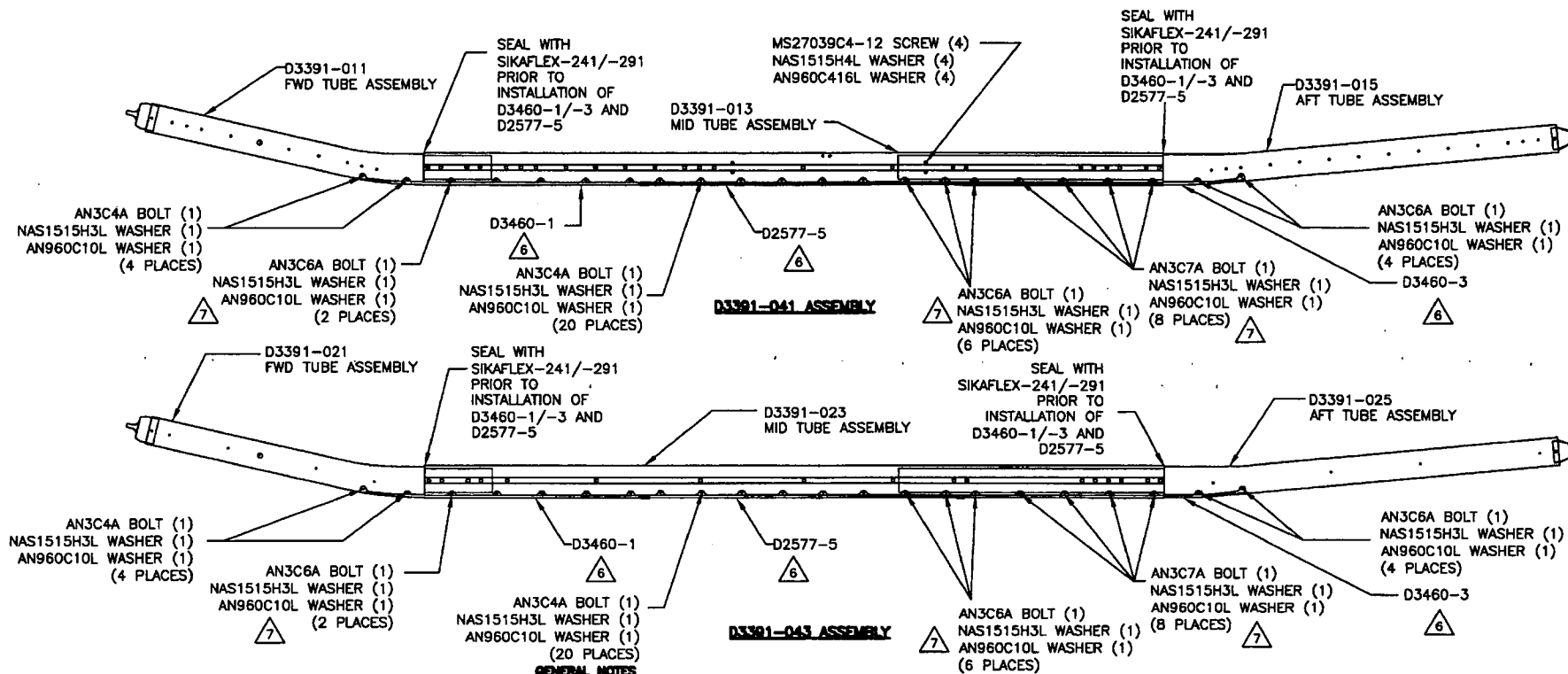
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Mfg / Design Mgr	Approval QC Inspector

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Design Mgr	Approval QC Inspector
			Initial Design Mgr	Action Description Design Mgr	Sign & Date			

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

NOTE: Date & initial all entries

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_



# **D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST**

QTY - 041	QTY - 043	PART NUMBER	DESCRIPTION
X	X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
		D3391-043	FLOAT SKIDTUBE ASSEMBLY
1		D3391-011	FWD TUBE ASSEMBLY
1		D3391-013	MID TUBE ASSEMBLY
1		D3391-015	AFT TUBE ASSEMBLY
	1	D3391-021	FWD TUBE ASSEMBLY
	1	D3391-023	MID TUBE ASSEMBLY
	1	D3391-025	AFT TUBE ASSEMBLY
24	24	AN3C4A	BOLT
12	12	AN3C6A	BOLT
8	8	AN3C7A	BOLT
44	44	NAS1515H3L	WASHER
44	44	AN960C10L	WASHER
4		MS27039C4-12	SCREW
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
1	1	D2577-5	WEARSHOE
1	1	D3460-1	WEARSHOE
1	1	D3460-3	WEARSHOE

- GENERAL NOTES**
- 1) ALL DIMENSIONS ARE IN INCHES
  - 2) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1  
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
  - 4) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROXYON" AFTER FINAL ASSEMBLY. CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
  - 5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL "E" SIZE HOLES (#0.250-#0.257) FOR WEARSHOE INSERTS. C/SINK #0.391/#0.425 x 100" AS APPLICABLE AND INSTALL INSERTS EXCEPT WHERE INDICATED.
  - 6) APPLY A LAYER OF SIKAFLEX -241/-291 ADHESIVE BETWEEN THE BOTTOM OF THE SKIDTUBE ASSEMBLY AND THE WEARPLATES
  - 7) DO NOT TORQUE, HAND TIGHTEN ONLY

REFERENCE ONLY

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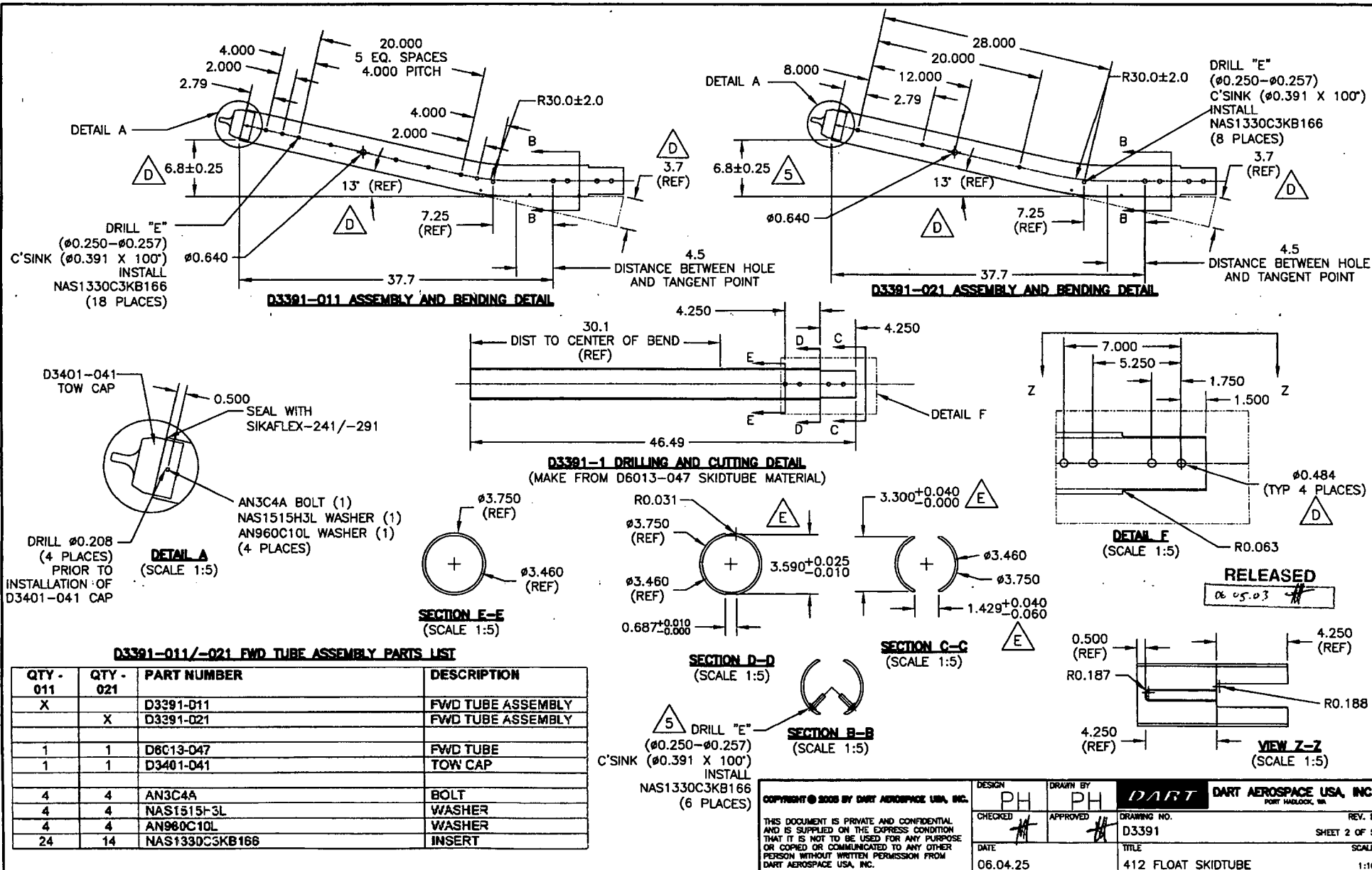
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DESIGN	PH	DRAWN BY	PH	DART AEROSPACE USA, INC.
CHECKED	*	APPROVED	*	PORT HANCOCK, VA
DATE	06.04.25	TITLE	412 FLOAT SKIDTUBE	REV. E
				SHEET 1 OF 5
				SCALE
				NTS

RELEASED

06-05-03





QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6C13-047	FWD TUBE
1	1	D3401-041	TOW CAP
4	4	AN3C4A	BOLT
4	4	NAS1515-3L	WASHER
4	4	AN960C10L	WASHER
24	14	NAS1330CSKB166	INSERT

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## DESIGN

•

**CHECK**

CHUCK

100

DATE \_\_\_\_\_

**DRAWN BY**

PH

**APPROVED**

APPROVES

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DART

**DART AEROSPACE USA, INC.**  
PORT HADLOCK, OH

REV. 1

DRAWING NO.

D3391

03391

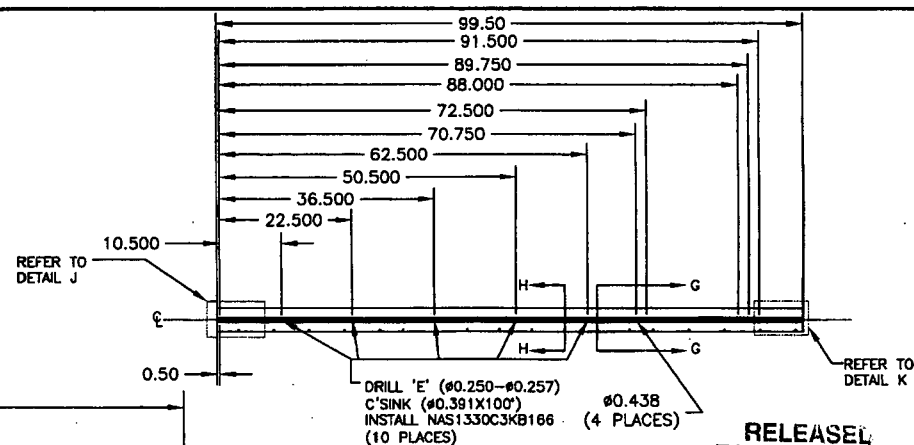
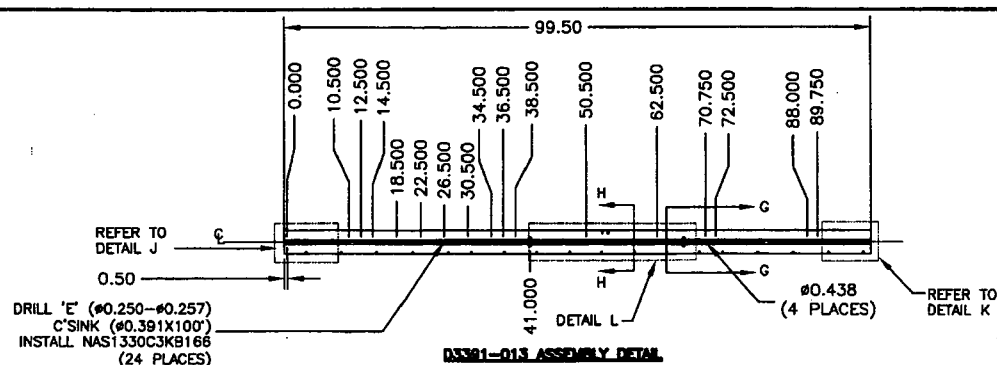
TRUE

REV. 1

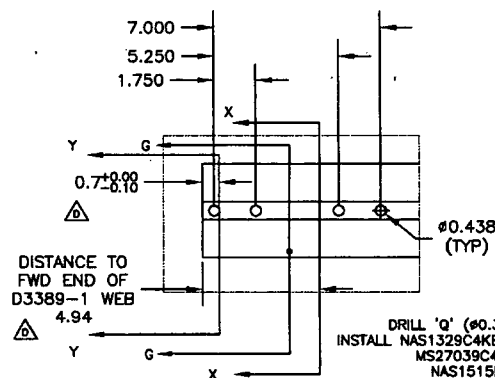
SHEET 2 OF 2

SHEET 2 OF 3

SCA

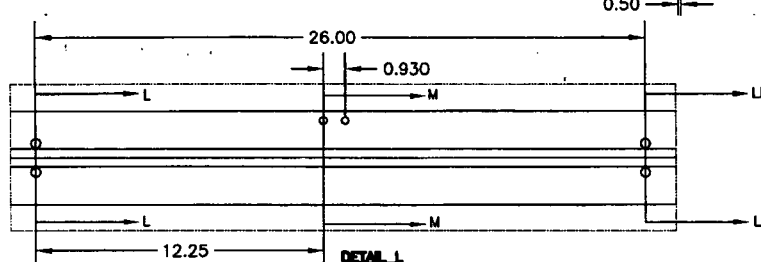


RELEASE

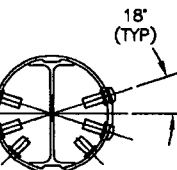


DETAIL J  
(SCALE 1:5)

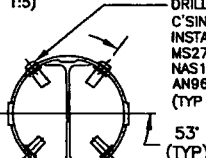
DRILL 'Q' (#0.332-#0.338)  
INSTALL NAS1329C4KB140 INSERT  
MS27039C4-08 SCREW  
NAS1515H4L WASHER  
AN960C416L WASHER  
(TYP 4 PLACES)



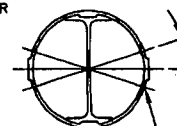
DETAIL L  
(SCALE 1:5)



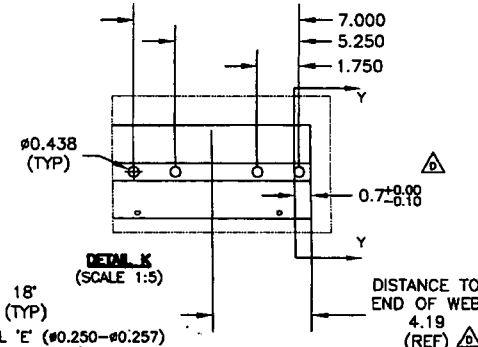
SECTION L-L  
(SCALE 1:4)



SECTION M-M  
(SCALE 1:4)



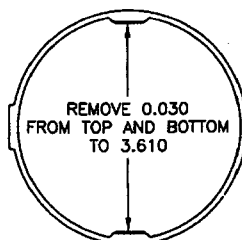
SECTION LL-L  
(SCALE 1:4)



DETAIL K  
(SCALE 1:5)

DRILL 'E' (#0.250-#0.257)  
(TYP 4 PLACES)

NAS1330C3KB116  
INSERT  
(TYP 20 PLACES)

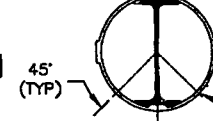


SECTION X-X  
(SCALE 1:2)

REMOVE 0.225  
FROM TOP AND BOTTOM  
TO 3.800  
(0.7 FROM BOTH ENDS)



SECTION Y-Y  
(SCALE 1:4)



SECTION Z-Z  
(SCALE 1:4)



SECTION H-H  
(SCALE 1:4)

# D3391-013/-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 013	QTY - 023	PART NUMBER	DESCRIPTION
X	X	D3391-013	MID TUBE ASSEMBLY
		D3391-023	MID TUBE ASSEMBLY
1	1	D2500-1-100	EXTRUSION
1	1	D3389-1	WEB
24	20	NAS1330C3KB116	INSERT
24	10	NAS1330C3KB166	INSERT
4		NAS1329C4KB140	INSERT
4		NAS1515H3L	WASHER
4		AN960C10L	WASHER
4		NAS1515H4L	WASHER
4		AN960C416L	WASHER
4		MS27039C1-09	SCREW
4		MS27039C4-08	SCREW

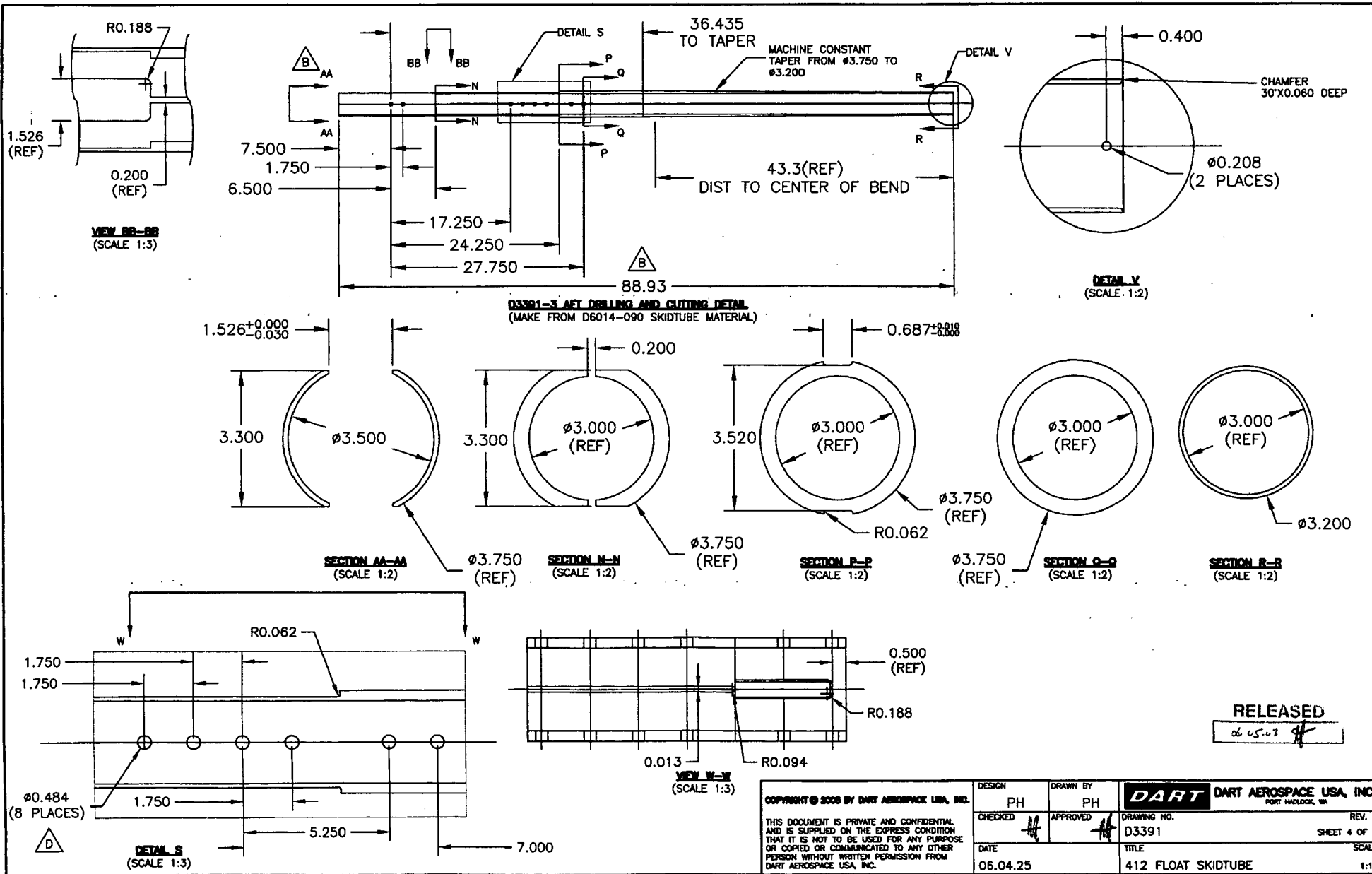
## D3391-013/-023 MID TUBE ASSEMBLY

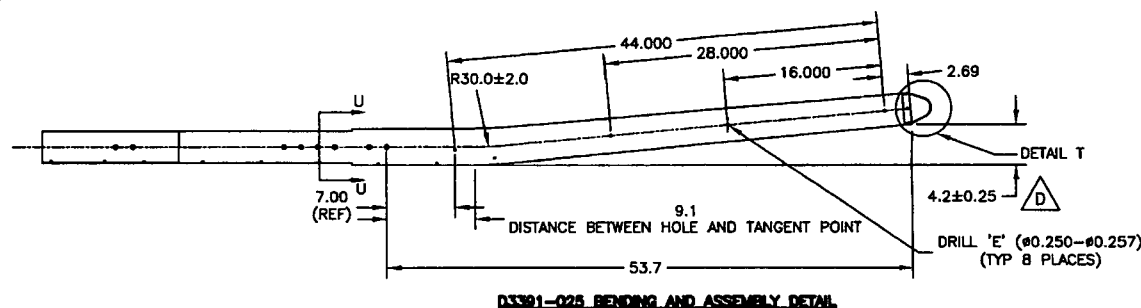
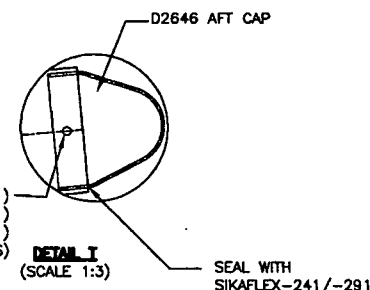
- 1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015

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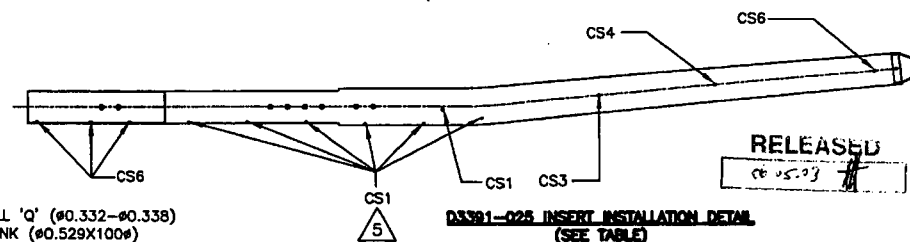
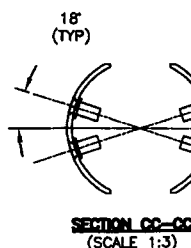
DESIGN	PH	DRAWN BY	PH	DART AEROSPACE USA, INC. PORT HADLOCK, MA
CHECKED	#	APPROVED	#	
DATE	06.04.25	DRAWING NO.	D3391	REV. E
TITLE	412 FLOAT SKIDTUBE	SHEET	3 OF 5	SCALE
				1:20





HC_ES MARKED	QTY D6381-315	CTY D3391-025	C'SINK	PIN
C81	18	14	0.0425	AES810KB368
C82	4		0.0391	AES810KB368
C83	4	2	0.0391	NAS1350C3KE316
C84	4	2	0.0391	NAS1350C3KE266
C85	4		0.0391	NAS1350C3KE216
C88	12	8	0.0391	NAS1350C3KE166

QTY - 016	QTY - 026	PART NUMBER	DESCRIPTION
X		D3381-015	AFT TUBE ASSEMBLY
	X	D3381-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2946	AFT CAP
18	14	AESS10KB386	INSERT
4	2	NAS1330C3KB316	INSERT
4	2	NAS1330C3KB268	INSERT
4		NAS1330C3KB216	INSERT
12	8	NAS1330C3KB166	INSERT
4		NAS1330C4KB151	INSERT
2	2	AN3CA4	BOLT
2	2	NAS1515H3L	WASHER
2	2	AN980C1DL	WASHER



RELEASED

06 05 03 #

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DESIGN	DRAWN BY	 <b>DART AEROSPACE USA, INC.</b> PORT HADLOCK, WA
PH	PH	
CHECKED	APPROVED	DRAWING NO. <b>D3391</b>
DATE <b>06.04.25</b>		TITLE <b>412 FLOAT SKIDTUBE</b>
		REV. 5 OF 5 SHEET 5 OF 5 SCALE 1:12

<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	
<b>Description:</b> Float Skidtube (412)		<b>Part Number:</b>	D3391-3
<b>Inspection Dwg:</b> D3391 <b>Rev:</b> E		<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article      ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
14.000	+/-0.010	14.000				
3.500	+/-0.010	3.495	✓			
88.93	+/-0.030	88.92	✓			
44.995	+/-0.030	45.00	—			
3.200	+/-0.010	3.205	✓			
1.526	+0.000/-0.030	1.525	—			
0.200	+/-0.010	0.198	—			
7.500	+/-0.010	7.490	—			
27.750	+/-0.010	27.750	—			
31.750	+/-0.010	31.750	—			
35.250	+/-0.010	35.250	—			
0.400	+/-0.010	0.399	—			
<del>00.208</del>	+0.005/-0.001					
3.300	+/-0.010	3.305	—			
0.200	+/-0.010	0.203	—			
3.520	+/-0.010	3.527	—			
0.687	+0.010/-0.000	0.687	—			
R0.062	+/-0.010	R0.062	—			
Ø0.484	+0.005/-0.001	Ø0.484	—			

<b>Measured by:</b> MS/BG/m	<b>Audited by:</b> E	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 06/08/16	<b>Date:</b> 06/08/29	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	06.04.24	New Issue      P/O D3391-025	KJ/JLM	
B	06.06.19	Dwg revision update	KJ/JLM	